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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/624,427 | 07/22/2003 | Maher S. Amer | WRU 0235 PA/40878.321 | 6433 |

7590 08/12/2004
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| EXAMINER |
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NOVACEK, CHRISTY L

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| ART UNIT | PAPER NUMBER |
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2822

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/624,427

Applicant(s)

AMER ET AL.

Examiner

Christy L. Novacek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12-16 and 19-23 is/are rejected.
- 7) ☒ Claim(s) 6-11, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/29/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the communication filed July 22, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 13-16 and 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kondo et al. (RE 38,072).

Regarding claims 1 and 20, Kondo discloses providing a first material, configuring at least a portion of the first material to exhibit a first stress profile, forming a second material over and in contact with the first material with a second stress profile being defined therebetween such that a net stress profile results between the first and second materials that is a function of the first and second stress profiles, wherein the first stress profile is configured in a specific manner so as to achieve a desired net stress profile (see claim 4).

Regarding claim 2, the first stress profile is configured in a specific manner to achieve a predetermined net stress that is approximately zero (see claim 4).

Regarding claims 3 and 19, the first stress profile is configured so as to be generally equal in magnitude, but opposite of the second stress profile such that the net stress profile is substantially zero.

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Regarding claims 5, 16 and 21, the first stress profile is configured using an instrument (the stress profile of the layer depends upon the elements contained within the layer, the thickness of the layer, and other variables; these variables are controlled by whatever instrument is used to deposit the layer).

Regarding claim 13, the first material includes a metal (see claim 4).

Regarding claim 14, the first stress profile is configured to exhibit a depth that is controlled to cancel mismatched stresses over a predetermined thickness.

Regarding claim 15, the first stress includes controlled stress patterns having predetermined shapes arranged to achieve the desired net stress profile.

Regarding claim 22, the first stress profile is a tensile stress.

Claims 1, 4, 5, 12, 14-16 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Bona et al. (US 6,768,857).

Regarding claims 1 and 20, Bona discloses providing a first material, configuring at least a portion of the first material to exhibit a first stress profile, forming a second material over and in contact with the first material with a second stress profile being defined therebetween such that a net stress profile results between the first and second materials that is a function of the first and second stress profiles, wherein the first stress profile is configured in a specific manner so as to achieve a desired net stress profile (col. 9, ln. 11-col. 10, ln. 16).

Regarding claim 4, the first and second materials are dissimilar (SiON and SiO₂).

Regarding claims 5, 16 and 21, the first stress profile is configured using an instrument (the stress profile of the layer depends upon the elements contained within the layer, the

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thickness of the layer, and other variables; these variables are controlled by whatever instrument is used to deposit the layer).

Regarding claim 12, the first material is a ceramic material (SiON).

Regarding claim 14, the first stress profile is configured to exhibit a depth that is controlled to cancel mismatched stresses over a predetermined thickness.

Regarding claim 15, the first stress includes controlled stress patterns having predetermined shapes arranged to achieve the desired net stress profile.

Regarding claim 22, the first stress profile is a tensile stress.

Regarding claim 23, the net stress is a compressive stress.

Allowable Subject Matter

Claims 6-11, 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of the allowable subject matter of claims 6-10, 17 and 18 is the inclusion therein, in combination as currently claimed, of the limitation of using specific treatment methods such as ablation, melting and shock waves or using a specific instrument such as a laser to induce the first stress profile in the first material. This limitation is found in claims 6-10, 17 and 18 and is neither disclosed nor taught by the prior art of record, alone or in combination.

The primary reason for the indication of the allowable subject matter of claim 11 is the inclusion therein, in combination as currently claimed, of the limitation of configuring the first

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stress profile by creating voids, grooves or trenches on the surface of the first material. This limitation is found in claim 11 and is neither disclosed nor taught by the prior art of record, alone or in combination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christy L. Novacek whose telephone number is (571) 272-1839. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLN
August 09, 2004


AMIR ZARABIAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800